Appl. No.	09/745,029
Applicant	James E. Ammonette, et al.
Filed	12/20/2000
Title	DETECTION OF TRACE LEVELS OF WATER
TC/A.U.	2877
Examiner	Rosenberger, R.A.
Docket No.	E-1899

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RULE 132 AFFIDAVIT OF MARK BARNES

I, Mark Barnes, do hereby declare and state as follows:

For the past 8 years I have been actively engaged as a consultant in the field of oil analysis and contamination control technologies. My current position is with Noria Corporation where I am the Director, Oil Analysis & Contamination Control Technologies and a Senior Technical Consultant.

I obtained my doctoral degree in 1991 in the area of analytical spectroscopy. After 5 years working as a research associate at the University of British Columbia, Canada, I accepted a position with a commercial oil analysis lab in 1995, where I was involved with helping end-users implement, develop, and manage oil analysis and lubrication programs. I have helped numerous clients develop effective lubrication management programs and to troubleshoot complex lubrication problems through oil analysis. My client list includes TXU, Cargill Corp., Eaton Corp., Southern Companies, BC Hydro, Southern Cal Edison and BJ Services Company.

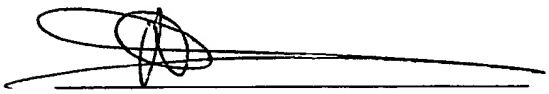
I am the Technical Editor of Practicing Oil Analysis Magazine, and the Associate Technical Editor, Machinery Lubrication Magazine. I have 5 years experience with a commercial oil analysis lab setting up and managing oil analysis programs for manufacturing, power generation, pulp and paper, forestry, fleet and mining clients, and 5 years experience teaching oil analysis best practice classes.

I have more than 8 years practical research experience in Physical and Analytical Chemistry including more than 20 articles and papers in peer reviewed journals. I am a member of STLE, and hold BSc. and PhD degrees in Physical Chemistry.

As a result of my academic and professional interests, I have become intimately familiar with both the needs of industry as they relate to oil analysis, as well as with the technologies available to fulfill those needs. I am also familiar with the techniques and technology described and claimed by Dr. James Amonette and Dr. Tom Autrey in the above captioned patent application. I am therefore qualified to make the following statements and observations.

Prior to the techniques described and claimed by Dr. Amonette and Dr. Autrey in the above captioned patent application, there had long existed a need in the field of oil analysis for methods which would allow the detection of water in oil at concentrations of less than 0.1% utilizing instrument based techniques. While it was possible to detect water in oil at these lower concentrations, those having skill in the art relied upon wet chemistry techniques to do so. Numerous drawbacks were and are associated with the use of these wet chemistry techniques, and those having skill in the art had long desired a technique that would allow real-time, on-line analysis that was not possible utilizing the available wet chemistry techniques.

The use of photoacoustic spectroscopy, as described and claimed by Dr. Amonette and Dr. Autrey in the above captioned patent application, therefore provided for the first time the ability to detect water in oil in a manner that allowed on-line, real-time analysis. The technique thereby fulfilled what had been a long felt need by those having skill in the art.



Mark Barnes

AUGUST 7, 2003
date